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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,431	03/30/2004	Richard D. Newberry	5004-0023-1-1	3359
35301	7590	07/17/2006	EXAMINER	
MCCORMICK, PAULDING & HUBER LLP			COCKS, JOSIAH C	
CITY PLACE II				
185 ASYLUM STREET			ART UNIT	PAPER NUMBER
HARTFORD, CT 06103				3749

DATE MAILED: 07/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/812,431	NEWBERRY, RICHARD D.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Josiah Cocks	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 24 April 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 7-44 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-6 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 March 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                                |                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                           | Paper No(s)/Mail Date. _____                                                |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/31/2005</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|                                                                                                                                                | 6) <input type="checkbox"/> Other: _____.                                   |

**DETAILED ACTION**

***Election/Restrictions***

1. Claims 7-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 4/24/2006.

***Drawings***

2. The drawings are objected to because they include handwritten reference characters that are difficult to read and lines and shading that are not uniformly thick and well defined. See requirements of 37 CFR 1.84(l) and (p).

**INFORMATION ON HOW TO EFFECT DRAWING CHANGES**

**Replacement Drawing Sheets**

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

### **Annotated Drawing Sheets**

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

### **Timing of Corrections**

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

### ***Information Disclosure Statement***

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered (note p. 14 of applicant's specification).

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-6 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 includes in the preamble that the control system is for a heating system that includes recited structural elements including a combustion chamber. Claim 1 further includes in line 5 of the body of the claim a reference to “the combustion chamber of a heating system.” Accordingly, the heating system and its recited structural elements have been regarded as limiting. However, the reference to “a heating system” is unclear as such a heating system has been introduced in the preamble of the claim. This recitation in line 5 of the claim has been regarded as reciting “the heating system.”

Claim 1 also recites in line 15 “the measured and computed carbon dioxide content of the combustion gases.” The examiner notes that this claim does not introduce any structural element that measures the carbon dioxide content. Further, it is not clear what constitutes the “computed carbon dioxide content.” Is this recitation referring to the “data that precisely correlates in a linear fashion with the carbon dioxide content?” If so, it is not clear has this correlating data may be considered to be “computed carbon dioxide content.” For the purpose of an examination on the merits, these limitations of this claim have been regarded as positively introducing a structural element that measures a level of carbon dioxide and a element provides computation of the total carbon dioxide content of the combustion gases.

In claim 1, a combustion flame source is positively recited but the claim does not expressly recite that the combustion flame source actively produces a combustion flame. As the claim later refers to “the combustion flame,” for the purpose of an examination on the merits the

recitation of “combustion flame source” has been regarded “combustion flame source producing a combustion flame.”

Correction is required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-6 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,249,954 to Allen et al. (“Allen”) in view of U.S. Patent No. 5,277,575 to Newberry (“Newberry”).

Allen discloses in the specification and Figs. 1-12 an invention in the same field of endeavor as applicant’s invention and similar to that described in applicant’s claims 1-6. In particular, Allen shows a control system (Fig. 1) for a heating system (100). The heating system is a combustion facility that includes a combustion chamber (chamber above burner 130), an igniter (ignition source, col. 5, line 49), an air blower (air delivery equipment of windbox 134, see col. 5, lines 38-40), and a fuel pump (fuel delivery equipment, see, col. 5, lines 28). At least one ultraviolet (UV) sensor (200) (See at least col. 5, lines 62-66) is provided adjacent to a combustion flame source (130) in the combustion chamber of the heating system for generating analog signals indicative of the quality of the combustion flame based on the characteristics of

UV light generated by the combustion flame (see at least col. 6, lines 60-66 and col. 6, lines 32-46).

In regard to claim 1, it appears that by reciting (1) “means...for converting” in line 8, (2) “means for performing...” in line 11, and (4) “means for tracking changes...” in line 1, applicant intends to invoke 35 U.S.C. § 112 6<sup>th</sup> paragraph in each instance. This recitation satisfies the 3-prong analysis set forth in MPEP § 2181 and therefore has been regarded as invoking 35 U.S.C. § 112 6<sup>th</sup> paragraph. The elements that correspond each of the “means for” clauses are the components of the processor circuit (48), which performs each of the functions recited.

The examiner has found that the prior art element, controller (300) in Allen (A) performs the functioning specified in the claim, (B) is not excluded by any explicit definition provided in the specification for an equivalent, and (C) is an equivalent of the means plus function limitation. See MPEP § 2183. In particular, this controller (300) includes a preprocessor (302) that communicates with the UV sensor for converting the analog signal into a digital signal as recited (see at least col. 6, lines 60-66), a processor (304) that performs numerical and logical operations on the digital signals so as to result in data that precisely correlates in a linear fashion with the carbon dioxide content in the combustion gases (see at least col. 6, lines 24-29 and col. 7, line 31 through col. 8, line 16), and a post processor (306) that tracks changes in the flame quality from an initial setup optimal value as correlated with a computed carbon dioxide content of the combustion gases (note discussion of using a sensing device to measure the emitted carbon dioxide, see col. 6, lines 22-29, and the discussion of calculation of the output signal based on inputted values from the sensing means, at least col. 8, lines 17-60).

In regard to at least claims 2 and 3, the digital signals include control signals for regulating the quality of the flame through on and off operation of at least the fuel valve (see at least col. 6, lines 29-35).

In regard to at least claim 4, the controller (300) is considered to be the recited microcontroller.

In regard to at least claims 5 and 6, the controller (300) functions to determine from the digital signals the highest and average intensity frequencies of UV light generated by the flame (see col. 6, lines 4-19).

Allen possibly does not disclose that the heating system includes a thermostat.

Newberry teaches a control system for a heating system in the same field of endeavor as applicant's invention and Allen. In Newberry, a heating system includes a combustion chamber (103), igniter (104), fuel pump (106), and a thermostat (110) that are controlled via control system (116). The thermostat (110) desirably functions to maintain the heated space at a preset temperature (see at least col. 3, lines 60-65).

Therefore, in regard to claims 1-6, it would have been obvious to modify the heating system of Allen to incorporate a thermostat as taught in Newberry for the desirable purpose of to provide a "call for heat" signal to the control system in order to maintain the heated space at a desired temperature (see Newberry, co. 3, lines 60-65).

### *Conclusion*

8. This action is made non-final. A THREE (3) MONTH shortened statutory period for reply has been set. Extensions of time may be available under the provisions of 37 CFR

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1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Nos. 4,410,266 (Seider), 4,502,625 (Mueller), 5,480,298 (Brown), 5,971,747 (Lemelson et al.), 6,113,384 (Sebastiani), and foreign patent documents JP 1-312319 and WO 2006/019436 are cited to further show the state of the art concerning control systems for heating systems.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is (571) 272-4874. The examiner can normally be reached on weekdays from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg, can be reached at (571) 272-4828. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcc  
July 6, 2006

  
JOSIAH COCKS  
PRIMARY EXAMINER  
ART UNIT 3749